

CLAIM AMENDMENTS

1 1.(*currently amended*) An exhaust-vibration decoupling connector comprising:
2 an inlet tube extended downstream from a decoupler inlet to proximate an upstream
3 portion of a damper fixture, said inlet tube having outlet an outward radial bend around a
4 circumference on an upstream end to interlock with an outlet tube;
5 an outlet tube extended upstream from a decoupler outlet to proximate a downstream
6 portion of the damper fixture, said outlet tube having an inward radial bend on a downstream
7 end which interlocks with the bend on the inlet tube;
8 the damper fixture being proximate midway between the decoupler inlet and the
9 decoupler outlet;
10 a vibration damper positioned removably in the damper fixture;
11 a bellows having an upstream bellows attachment proximate the decoupler inlet;
12 the bellows having a downstream bellows attachment proximate the decoupler outlet;
13 the bellows having a bellows inside perimeter that is positioned radially outward
14 predeterminedly from a radially outside perimeter of the vibration damper;
15 the bellows inside perimeter including inside peripheries of undulations of the
16 bellows;
17 a flex cover having an upstream flex attachment proximate the decoupler inlet;
18 the flex cover having a downstream flex attachment proximate the decoupler outlet;
19 the flex cover having a cover inside perimeter that is positioned proximate a bellows
20 outside perimeter;
21 a shield sleeve having a shield attachment proximate the decoupler outlet; and
22 the shield sleeve having a shield inside perimeter that is positioned radially outward
23 predeterminedly from a radially outside perimeter of the flex cover.

1 2.(*original*) The exhaust-vibration decoupling connector of claim 1 wherein:

2 the upstream bellows attachment includes an upstream bellows sleeve extending

3 downstream axially a predetermined attachment distance from proximate the decoupler inlet

4 to a first undulation wall that is extended radially intermediate the upstream bellows sleeve

5 and a first side of a first undulation of the bellows;

6 the downstream bellows attachment includes a downstream bellows sleeve extending

7 upstream axially a predetermined attachment distance from proximate the decoupler outlet

8 to a second undulation wall that is extended radially intermediate the downstream bellows

9 sleeve and a second side of a last undulation of the bellows;

10 the upstream bellows sleeve includes an inside periphery that is positioned removably

11 on an outside periphery of a fastener portion of the inlet tube; and

12 the downstream bellows sleeve includes an inside periphery that is positioned

13 removably on an outside periphery of a fastener portion of the outlet tube.

1 3.(*original*) The exhaust-vibration decoupling connector of claim 2 wherein:

2 the upstream flex attachment includes an upstream flex-cover sleeve extending

3 downstream axially a predetermined attachment distance from proximate the decoupler inlet

4 to a first flex-cover wall that is extended radially intermediate the upstream flex-cover sleeve

5 and a first attachment side of the flex cover; and

6 the downstream flex attachment includes a downstream flex-cover sleeve extending

7 upstream axially a predetermined attachment distance from proximate the decoupler outlet

8 to a second flex-cover wall that is extended radially intermediate the downstream flex-cover

9 sleeve and a second attachment side of the flex cover.

1 4.(*original*) The exhaust-vibration decoupling connector of claim 3 wherein:

2 the upstream flex-cover sleeve includes an inside periphery that is positioned

3 removably on an outside periphery of the upstream bellows sleeve; and

4 the downstream flex-cover sleeve includes an inside periphery that is positioned

5 removably on an outside periphery of the downstream bellows sleeve.

6 **5.(original)** The exhaust-vibration decoupling connector of claim 1 wherein:
7 the inlet tube is circumferential with an inside periphery and an outside periphery;
8 the outlet tube is circumferential with an inside periphery and an outside periphery;
9 the inside periphery and the outside periphery of the inlet tube are predeterminedly
10 smaller than the inside periphery and the outside periphery of the outlet tube;
11 the damper fixture includes an inlet-tube step extended radially inward to a damper
12 seat having an axial downstream extension of the inlet tube;
13 the damper fixture includes an outlet-tube step extended radially inward to
14 predeterminedly proximate an outside periphery of the damper seat;
15 the inlet-tube step includes a first side of the damper fixture; and
16 the outlet-tube step includes a second side of the damper fixture.

1 **6.(original)** The exhaust-vibration decoupling connector of claim 5 wherein:
2 the outlet-tube step is articulated to allow axial and pivotal travel of the outlet tube in
3 relation to the inlet tube predeterminedly.

1 **7.(original)** The exhaust-vibration decoupling connector of claim 5 wherein:
2 the vibration damper includes a mesh-wire washer having an inside periphery that is
3 positioned removably on the damper seat, an outside periphery that is predeterminedly
4 smaller than the bellows inside periphery, a first side proximate the inlet-tube step and a
5 second side proximate the outlet-tube step.

1 **8.(original)** The exhaust-vibration decoupling connector of claim 5 wherein:
2 the vibration damper includes a wave-spring damper having one or more wave springs
3 intermediate wave-spring washers in detachably sealed contact with the inlet-tube step and
4 the outlet-tube step.

1 **9.(original)** The exhaust-vibration decoupling connector of claim **5** wherein:
2 the vibration damper includes a helical-spring damper;
3 the helical-spring damper has a first side in detachable contact with the inlet-tube step
4 and a second side in detachably contact with the outlet-tube step.

1 **10.(original)** The exhaust-vibration decoupling connector of claim **5** wherein:
2 the vibration damper includes a spring-side damper having a helical spring in a
3 circumferential channel with a first wall adjacent to the inlet-tube step and a second wall
4 adjacent to the outlet-tube step;
5 the circumferential channel is arcuate intermediate the first wall and the second wall;
6 and
7 the first wall and the second wall have inside peripheries proximate the outside
8 periphery of the damper seat.

1 **11.(original)** The exhaust-vibration decoupling connector of claim **1** and
2 further comprising:
3 the flex cover includes a heat-resistant and flexible material that is reinforced with
4 wire network predeterminedly.

1 **12.(original)** The exhaust-vibration decoupling connector of claim **1** wherein:
2 the flex cover includes braided-wire material.

1 **13.(original)** The exhaust-vibration decoupling connector of claim **12** wherein:
2 the flex cover includes a braid cap that is positioned intermediate the upstream flex
3 attachment and exhaust-outlet structure to which the exhaust-vibration decoupling connector
4 is attachable.

1 **14.(original)** The exhaust-vibration decoupling connector of claim 1 wherein:
2 the upstream bellows attachment is articulated for sealed attachment to a
3 predetermined exhaust-outlet structure; and
4 the downstream bellows attachment is articulated for sealed attachment to a
5 predetermined exhaust-treatment structure that is fluidly downstream from the exhaust-outlet
6 structure.

1 **15.(currently amended)** The exhaust-vibration decoupling connector of claim
2 [[13]] **14** wherein:
3 the upstream bellows attachment is disposed a snug-fit distance from the downstream
4 bellows attachment for fitting snugly intermediate the exhaust-outlet structure and the
5 exhaust-treatment structure predeterminedly.

1 **16.(original)** The exhaust-vibration decoupling connector of claim 15 wherein:
2 the shield sleeve has a shield length that is less than the snug-fit distance for allowing
3 axial distance change between the decoupler inlet and the decoupler outlet and for allowing
4 pivotal movement of the decoupler outlet predeterminedly.

1 **17.(original)** The exhaust-vibration decoupling connector of claim 1 wherein:
2 the bellows includes flexibly parallel walls intermediate arcuately flexible floors and
3 roofs.

1 **18.(original)** The exhaust-vibration decoupling connector of claim 17 wherein:
2 the bellows includes oppositely disposed ends that are buttressed against oppositely
3 disposed end walls of the flex cover.

1 **19.(original)** The exhaust-vibration decoupling connector of claim 1 wherein:
2 the bellows includes damping filler intermediate internal walls of undulations of the
3 bellows.

4 **20.(original)** The exhaust-vibration decoupling connector of claim 19 wherein:
5 the damping filler includes mesh wire.

1 **21.(previously presented)** An exhaust-vibration decoupling connector comprising:
2 an inlet tube extended downstream from an upstream portion of the inlet tube
3 proximate a decoupler inlet to proximate an upstream portion of a damper fixture, said inlet
4 tube having outward radial bend around a circumference on an upstream end to interlock
5 with an outer tube;
6 an outlet tube extended upstream from a downstream portion of the outlet tube
7 proximate a decoupler outlet to proximate a downstream portion of the damper fixture, said
8 outlet tube having an inward radial bend on a downstream end which interlocks with the bend
9 on the inlet tube;
10 the damper fixture being proximate midway between the decoupler inlet and the
11 decoupler outlet;
12 a vibration damper positioned removably in the damper fixture;
13 a bellows having an upstream bellows attachment proximate the decoupler inlet;
14 the bellows having a downstream bellows attachment proximate the decoupler outlet;
15 the bellows having a bellows inside perimeter that is positioned radially outward
16 predeterminedly from a radially outside perimeter of the vibration damper;
17 the bellows inside perimeter including inside peripheries of the bellows;
18 a flex cover having an upstream flex attachment proximate the decoupler inlet;
19 the flex cover having a downstream flex attachment proximate the decoupler outlet;
20 and
21 the flex cover having a cover inside perimeter that is positioned proximate a bellows
22 outside perimeter.

1 **22.(original)** The exhaust-vibration decoupling connector of claim **21** wherein:

2 the upstream bellows attachment includes an upstream bellows sleeve extending
3 downstream axially a predetermined attachment distance from proximate the decoupler inlet
4 to a first undulation wall that is extended radially intermediate the upstream bellows sleeve
5 and a first side of a first undulation of the bellows;

6 the downstream bellows attachment includes an downstream bellows sleeve extending
7 upstream axially a predetermined attachment distance from proximate the decoupler outlet
8 to a second undulation wall that is extended radially intermediate the downstream bellows
9 sleeve and a second side of a last undulation of the bellows;

10 the upstream bellows sleeve includes an inside periphery that is positioned removably
11 on an outside periphery of a fastener portion of the inlet tube;

12 the downstream bellows sleeve includes an inside periphery that is positioned
13 removably on an outside periphery of a fastener portion of the outlet tube;

14 the inlet tube is circumferential with an inside periphery and an outside periphery;

15 the outlet tube is circumferential with an inside periphery and an outside periphery;

16 the inside periphery and the outside periphery of the inlet tube are predeterminedly
17 smaller than the inside periphery and the outside periphery of the outlet tube;

18 the damper fixture includes an inlet-tube step extended radially inward to a damper
19 seat having an axial downstream extension of the inlet tube;

20 the damper fixture includes an outlet-tube step extended radially inward to
21 predeterminedly proximate an outside periphery of the damper seat;

22 the inlet-tube step includes a first side of the damper fixture; and

23 the outlet-tube step includes a second side of the damper fixture.

1 **23.(original)** The exhaust-vibration decoupling connector of claim **22** wherein:

2 the outlet-tube step is articulated to allow axial and pivotal travel of the outlet tube in
3 relation to the inlet tube predeterminedly.

1 **24.(original)** The exhaust-vibration decoupling connector of claim **22** wherein:
2 the vibration damper includes a mesh-wire washer having an inside periphery that is
3 positioned removably on the damper seat, an outside periphery that is predeterminedly
4 smaller than the bellows inside periphery, a first side proximate the inlet-tube step, and a
5 second side proximate the outlet-tube step.

1 **25.(original)** The exhaust-vibration decoupling connector of claim **22** wherein:
2 the vibration damper includes a helical-spring damper;

1 **26.(original)** The exhaust-vibration decoupling connector of claim **22** wherein:
2 the vibration damper includes a wave-spring damper.

1 **27.(original)** The exhaust-vibration decoupling connector of claim **22** wherein:
2 the vibration damper includes a spring-side damper having a helical spring in a
3 circumferential channel with a first wall adjacent to the inlet-tube step and a second wall
4 adjacent to the outlet-tube step;
5 the circumferential channel is arcuate intermediate the first wall and the second wall;
6 and
7 the first wall and the second wall have inside peripheries proximate the outside
8 periphery of the damper seat.

1 **28.(original)** The exhaust-vibration decoupling connector of claim **21** wherein:
2 the upstream bellows attachment is articulated for sealed attachment to a
3 predetermined exhaust-outlet structure; and
4 the downstream bellows attachment is articulated for sealed attachment to a
5 predetermined exhaust-treatment structure that is fluidly downstream from the exhaust-outlet
6 structure.

1 **29.(original)** The exhaust-vibration decoupling connector of claim **21** wherein:
2 the upstream bellows attachment is disposed a snug-fit distance from the downstream
3 bellows attachment for fitting snugly intermediate the exhaust-outlet structure and the
4 exhaust-treatment structure predeterminedly.

1 **30.(original)** The exhaust-vibration decoupling connector of claim **21** wherein:
2 the bellows includes flexibly parallel walls intermediate arcuately flexible floors and
3 roofs.

1 **31.(original)** The exhaust-vibration decoupling connector of claim **21** wherein:
2 the bellows includes damping filler intermediate internal walls of undulations of the
3 bellows.

1 **32.(original)** The exhaust-vibration decoupling connector of claim **21** wherein:
2 the damping filler includes mesh-wire rings.